# A CASE OF PURE LEIOMYOMA OF THE PROSTATE

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Pure leiomyoma of the prostate is very rare. A 67-year-old man was hospitalized with gross hematuria and urinary retention. Drip infusion pyelography revealed a defect of the urinary bladder. By radiological examinations, submucosal tumor of the bladder neck was diagnosed. Transrectal biopsy suggested a benign prostatic tumor histologically. Open resection of the tumor was performed. Histological findings were pure leiomyoma of the prostate. The postoperative course was good and urinary retention was improved remarkably.

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**Key words** : Pure leiomyoma, Macrohematuria, Prostate

## *INTRODUCTION*

Pure leiomyoma of the prostate is very rare, we could find only 12 cases in the Japanese literature since the case reported by Kojima in 1917. Recently, we encountered a patient with this disease who complained of asymptomatic gross hematuria and urinary retention. We discuss the features of this disease with a review of the literature.

## *CASE REPORT*

A 67-year-old man presented with asymptomatic gross hematuria and urinary retention of 4 months duration. After a defect in the bladder was noted on drip infusion pyelography, he was referred to our hospital. Complete blood count was normal except for gross hematuria on urinalysis. Carcinoembryonal antigen (CEA) was 7.2 ng/ml, prostate specific antigen (PSA) was 8.8 ng/ml. Because serum CEA was slightly elevated, barium studies and gastroscopy were performed. Under a diagnosis of gastric cancer, total gastrectomy was performed. On rectal digital examination, the prostate was the size of a hen's egg, elastic soft, with a smooth surface, not nodular. A large spherical mass was recognized from the anterior wall to 12 o'clock on the bladder neck. The mucosa of the bladder was normal, not irregular. Drip infusion pyelography showed a defect in the bladder. Transrectal sonography revealed a homogeneous mass. Urethrography revealed elevation of the bladder base and elongation of the posterior urethra. Residual urine was 110 ml.

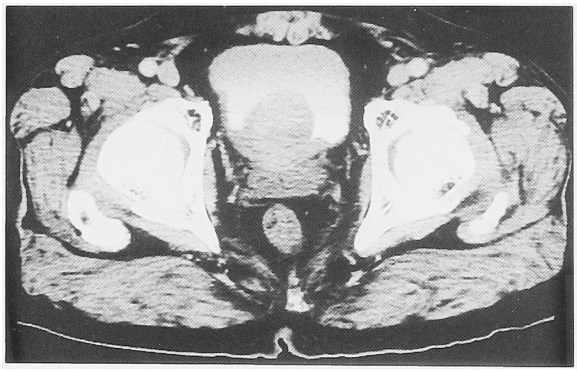

Fig. 1. Computed tomography of the pelvis revealed an elevated mass in the bladder lumen.

Computed tomography of the pelvis revealed an elevated mass in the bladder lumen. Bladder mucosa showed no irregularity and there was no lymphadenopathy in the pelvis (Fig. 1). Magnetic resonance imaging of the pelvis revealed a mass that appeared continuous from the bladder neck to inner portion of the prostate (Fig. 2). We found that the tumor had originated from prostate tissue. Therefore, under the diagnosis of prostatic tumor, a tumor biopsy was performed by transrectal sonography at first. The tumor was an encapsulated homogeneous mass. Pathological findings showed a benign prostatic tumor with few smooth muscle tissue. Under a diagnosis of benign prostatic tumor, open resection of the tumor was performed on August 3, 1994. By middle lower abdominal incision, we reached Retzius's space. We recognized that the

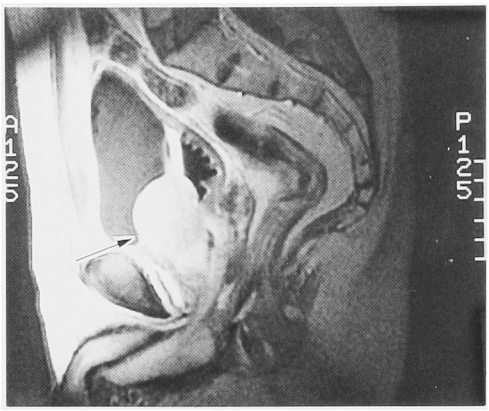

Fig. 2. On magnetic resonance imaging of the pelvis, the mass appeared continuous from the bladder neck to the inner portion of the prostate.

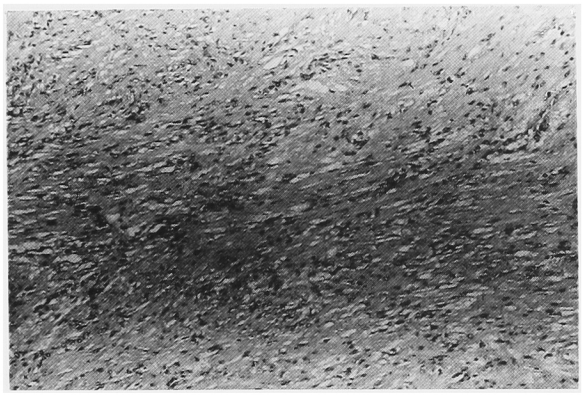

Fig. 3. Microscopic section of pure leiomyoma of prostate (H & E; ×33).

tumor with a smooth surface pressed the bladder neck and the prostatic urethra. We enucleated the tumor. The specimen weighed 25 gm. It had a smooth surface and was encapsulated forming a whole homogeneous mass. On microscopic examination, the fragments were found to be composed of fasciculated bands of spindle-shaped smooth muscle. The ratio of nuclei to cytoplasm was low; mitoses and atypia were absent. The pathological diagnosis was leiomyoma of the prostate (Fig. 3). The postoperative course was good and urinary retention was improved remarkably. Postoperative residual urine was approximately 5 ml.

## *DISCUSSION*

Pure leiomyoma of the prostate is very rare. Kaufman defined this entity as a circumscribed or encapsulated mass of smooth muscle, 1 cm or more in diameter, containing varying amounts of fibrous tissue but devoid of glandular elements, and which is either obviously prostatic or juxtaprostatic in origin and position[1]

Thirteen cases including our case have been reported in the Japanese literature. The pathogenesis of leiomyoma of the prostate remains unclear. Vassilakis suggested that infection and inflammation transform glandular tissue into smooth muscle and that hypertrophy leads to myoma[2]. Patch and Rhea indicated that leiomyomas originate from embryological analgen[3] The main clinical symptom is urinary disturbance as in benign prostatic hypertrophy, differing with the localization within the prostate. Nakamura and Ninman reported that rectal disturbance was a chief complaint[4,5] The chief complaints in the present case were asymptomatic gross hematuria and dysuria. Concerning radiological diagnosis, there were few case reports and there seemed to be no general findings. Regan reported that in a large leiomyoma of the prostate, computed tomography of the pelvis revealed clear margins and a nodule in the inner portion[6]. Nakamura reported magnetic resonance imaging relative to muscle on T1-weighted images[4] In our case, the pelvic computed tomograph showed clear margins, but there were no nodules in the inner portion. Pelvic magnetic resonance imaging in our case revealed a slight isosignal relative to muscle on T1-weighted images. Transrectal ultrasonography revealed a homogeneous mass, differing from prostatic carcinoma, which shows a hypoechoic pattern[7]. This disease is benign, and we recommed a surgical method. Among 13 cases including our case, suprapubic prostatectomy was performed in 5, enucleation in 5, transurethral resection of the prostate in 2 and subtotal prostatectomy for prostatic cancer in 1[8] In our case, open resection was performed. Considering the definition, Belis indicated that true leiomyoma is distinguishable from hyperplasia by the presence of encapsulation and absence of glands[9], we recommend open resection of the tumor as the procedure of first choice.

## *CONCLUSION*

We reported a case of pure leiomyoma of the prostate. We discussed the features of this disease with a review of the literature.

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**和文抄録**

# 前立腺平滑筋腫の1例

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前立腺平滑筋腫は非常に稀な疾患である．67歳，男性が肉眼的血尿と尿閉を主訴に来院．DIPを含む画像診断では膀胱頸部にみられた粘膜下腫瘍と診断した．超音波下経直腸的生検では平滑筋組織を含む良性の前立腺腫瘍であった．腫瘍摘除術を施行．病理学的診断は前立腺平滑筋腫であった．術後排尿困難の著明な改善を認めた．

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